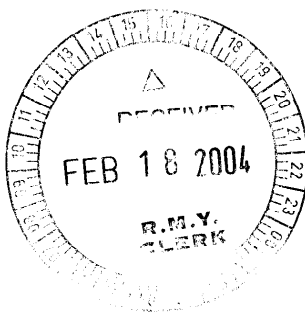




February 15th, 2004

Chair and Members,
of the Solid Waste Management Committee,
The Region of York,
Administration Center,
17250 Yonge Street,
Newmarket, Ontario
L3Y 6Z1

**REGION OF YORK
CLERK'S OFFICE**

FILE No. - P27

Assumed Composition of the Residual Waste Stream 68% Recyclable Material MacViro Consultants

Dear Sirs;

1. Recommendations;

1. That Solid Waste Management Committee Members be aware that 68% of the "residual" waste stream to be disposed of via New & Emerging Technologies is perfectly good recyclable material which we have failed to capture.
2. That Solid Waste Management Committee Members be aware that the current capture rate of allowable recyclable materials is less than 50%.
3. That Solid Waste Management Committee Members please remember that recycling in York Region currently returns a profit of \$18/ton.

By comparison incineration is \$150/ton. Advanced Thermal Technologies \$250/ton and more (MacViro Consultants).

4. That increased efficiency via promotion & education as requested by the Minister of the Environment, will significantly increase recycling profitability.

2. Purpose

The purpose of this letter is to provide valuable information found within several consultant's report recently prepared for amongst others the Region of York.

3. Background

MacViro New and Emerging Technologies Reports

The **Greater Toronto Area Waste Management Strategy Team** has been formed and includes Staff representatives from the Regions Of York, Peel, Durham as well as the City of Toronto.

This group retained MacViro Consultants and Earth Tech (Canada) Inc., at a cost of \$180,000, to provide a review of the fifty (50) submissions received in response to the City of Toronto request for Expressions of Interest (REOI) concerning the provision of New & Emerging Technologies for the disposal of residual waste.

The consulting team completed two reports

- A. Summary of individual responses to Toronto REOI on New and Emerging Waste Management Technologies, October 2003
- B. New & Emerging Technologies for residual waste processing: technologies review and reference manual, December 2003

It is this second report which contains the single most significant piece of information and that is the assumed composition of the residual waste stream (Technologies Review and Reference Manual page 5-5).

This information is attached and reveals that 68% of the residual, which is to be disposed of thermally, is recyclable material which we fail to capture.

Blue Box Material

In addition the Waste Management Strategy team commissioned "Waste Diversion by GTA Municipalities" prepared by Maria Kelleher of Kelleher Environmental at a cost of \$20,000. Ms. Kelleher was previously, Managing Partner, RIS International, perhaps the best known Waste Management Consulting firm in Canada. Several pages from this report are attached.

The preparation of this report was intended to document "all the waste diversion activities in the GTA and to show that significant progress and achievements have in fact been made to reduce the amount of garbage being landfilled by the GTA Municipalities".

The document reveals that York's 220,700 households, in both single and multifamily dwellings, generated a total of 288,200 tons of waste or 1.3 tons per household.

Ms. Kelleher's document also shows that of the 288,200 tons generated. 56,500 are recycled, a rate of 20%.

For your information the residential waste stream is comprised of;

RECYCLABLE materials - 45%

ORGANIC material - 42%

TOTAL - 87%

These figures are for the City of Toronto as compiled by Ms. Kelleher.

I doubt very much whether York's numbers are much different although a consultant might want you to believe otherwise and therefore pay for your own waste audit. The fact is the waste stream is quite similar from one Municipality to another.

The point is, the capture rate of recyclables in York is only about 45% (20/45). This is approximately the same as the Provincial average.

Furthermore, add in electronics, some furniture, a little building material from home renovations and you're over 90%.

True, residual, waste is less than 10%.

The Profit From Recycling

You may recall that before factoring the cost of collection recycling in York Region returned a profit of \$18/ton.

As efficiency improves ie. residents deposit more items in each container to be collected, profit will increase significantly, as revenues increase in proportion while collection costs increase only marginally.

The Cost of Thermal Processing

In comparison incineration is likely to cost in excess of \$150/ton. The more Advanced Thermal Technologies (ATT) \$250/ton and up according to your consultant, MacViro.

Submitted with thanks



Rod Muir,
Founder,
Waste Diversion Toronto
and
Waste Diversion Campaigner, Sierra Club of Canada,
GTA Group and Eastern Canada Chapter

Member:

Recycling Council of Ontario (RCO)

Association of Municipal Recycling Coordinators (AMRC)

Conservation Council of Ontario (CCO)

Municipal Waste Integration Network (MWIN)

Ontario Environmental Network (OEN)

Canadian Environmental Network (CEN) and the

Toronto Environmental Alliance (TEA)

ASSUMED COMPOSITION FOR RESIDUAL WASTE STREAM

Material	Waste Composition	Moisture Content	Volatile Solids Content	Fixed Carbon Content	Non-Combustible Content
Paper					
Newspaper	13.0%	6%	81%	12%	1%
Corrugated containers	1.8%	5%	78%	12%	5%
Boxboard	2.4%	5%	78%	12%	5%
Mixed paper	3.4%	10%	76%	8%	6%
Subtotal Paper	20.6%				
Glass & Metal					
Glass	4.6%	2%	0%	0%	98%
Tinplate (steel)	1.9%	5%	0%	0%	95%
Aluminum	0.6%	2%	0%	0%	98%
Subtotal Glass & Metal	7.1%				
Plastic					
PET	0.6%	2%	96%	1%	1%
HDPE	0.7%	2%	96%	1%	1%
Film Plastic	3.8%	2%	96%	1%	1%
Other Plastic	4.8%	2%	96%	1%	1%
Subtotal Plastic	9.9%				
Organics					
Food Wastes	14.4%	70%	21%	4%	5%
Yard Wastes	16.2%	60%	30%	9%	1%
Subtotal Organics	30.6%				
Other Materials					
Wood Waste	1.5%	20%	68%	11%	1%
Construction/Demolition	4.5%	2%	0%	0%	98%

TOTAL 74.2% (COMPOSITION OF THE REMAINING 25.6%
THE POINT IS NOT PROVIDED)

PAPER 20.6%

GLASS & METAL 7.1%

PLASTIC 9.9%

ORGANICS 30.6

TOTAL 68.2%

IE > 2/3'S OF RESIDUAL IS COMPRISED OF RECYCLABLE MATERIAL

WHY ARE WE NOT DOING MORE TO INCREASE THE CAPTURE RATE OF THIS MATERIAL

SOURCE: Technologies Review Reference Manual
MacViro, December 2003

Kelleher Environmental

Waste Diversion By GTA Municipalities

A Source Document

Report to the GTA Waste Management Strategy Team

December, 2003

1. INTRODUCTION

The City of Toronto and the Regions of Peel, York and Durham have formed a co-operative working group to coordinate waste diversion and disposal efforts in the GTA. The GTA Waste Management Strategy Team is responsible for a number of coordinated efforts including:

- Preparation of a Background Document on GTA Waste Generation, Diversion and Disposal;
- Inclusion of the Regions of York and Durham in Toronto's Request for Proposal for Long Term Source Separated Organics (SSO) Processing, and
- Pursuing a joint approach to the identification of New and Emerging Technologies to address residual waste from the four GTA Regions.

This Background Document has been written to describe waste diversion activities in GTA Regions, and explain how this will impact on the disposal of waste in the long term.

This document focuses on the waste that municipalities manage. This includes:

- household waste from single family and multi-family households;
- commercial waste picked up by the municipality, or dropped off at transfer stations;
- waste from municipal Agencies, Boards, Commissions and Departments (ABC&Ds), and
- biosolids and other municipal wastewater treatment plant residues.

Virtually all commercial and industrial waste in the GTA is managed by private contractors who pick up the garbage and handle it through a number of private sector transfer stations in southern Ontario. From these transfer stations, some of the garbage is hauled to Ontario landfills, and some is hauled to landfills in Michigan.

Readers in the US should be alerted to few terminology issues which differ between Canada and the US:

- This report is written in metric tons (tonnes), which is the unit of measure used in Canada.
 - One tonne is 1000kg, or 2200 lbs.
 - Each tonne is therefore 1.1 tons.
- Diversion in this document is measured by the GAP process, which measures current year diversion, rather than comparing disposal to a historic baseline, which is the approach used in many US jurisdictions. The GAP process was developed by a cross-Canada committee of federal, provincial and municipal waste management staff, as well as non-government organizations and industry representatives. An approach has been developed to calculate residential waste diversion on an "apples to apples" basis. The GAP approach generally leads to a lower diversion value than that reported in some of the international literature.
- Costs in this report are expressed as Canadian\$, a currency which has a lower value than the US\$. Where US\$ are involved, they are specifically identified.

TABLE OF CONTENTS

	Page
1 INTRODUCTION	1
2 GTA VITAL STATISTICS	2
2.1 Location and Population	2
2.2 Economy and Employment	3
3 MUNICIPAL WASTE MANAGEMENT IN ONTARIO	5
3.1 Regulatory Requirements for Waste Diversion in Ontario	5
3.2 Municipal Recycling in Ontario	5
3.3 Diversion of Leaf and Yard and Kitchen Organics in Ontario	6
3.4 Household Hazardous Waste Management	7
3.5 Waste Diversion Policies By Ontario Municipalities	7
3.6 Energy From Waste	7
3.7 Landfills in Ontario For Municipal Waste	8
3.8 Diversion Goals and Achievements in Ontario	8
3.9 Bill 90 and the Waste Diversion Act	9
4 MUNICIPAL WASTE DIVERSION IN THE GTA	11
4.1 Amount of Household Waste Managed	11
4.2 Current Recycling Activities	12
4.3 Backyard Composting	14
4.4 Leaf and Yard Waste Management	14
4.5 Household Organics Diversion Programs	15
4.6 Household Special Waste Programs	16
4.7 Drop Off Recycling of Non-Blue Box Materials from Households	17
4.8 Waste Electronics	18
4.9 Environment Days	19
4.10 Comprehensive Communication and Education (C&E) for GTA Residents	20
4.11 Bag Limits, Variable Rate Pricing Systems and Other Municipal Policies for Waste Diversion	21
4.12 Waste From Apartment Buildings and Multi-Family Housing	22
4.13 Energy From Waste	22
4.14 Refillable and Deposit Return Systems for Beverage Containers	24
4.15 Amounts of Household Waste Landfilled	24
4.16 Non-Household Waste Managed By GTA Municipalities	26
4.17 Municipal and Wastewater Treatment and Other Municipal Operations Wastes	28
4.18 Amounts of Non-Household Waste Sent to Landfill	30

5	CURRENT LANDFILLING OF GTA MUNICIPAL WASTE	31
5.1	Amounts of Municipal Waste Landfilled	31
5.2	Current Contracts And Disposal Locations for GTA Municipal Waste	31
5.3	Disposal of IC&I Waste From the GTA	38
6	TRADE, AND EXPORT AND IMPORT OF WASTE AND RECYCLABLES BETWEEN CANADA AND THE US	39
6.1	Trade Between Michigan and Canada	39
6.2	Reasons for Export of GTA Municipal Waste To Michigan Landfills	39
6.3	Amount of Municipal Waste Exported From GTA to Michigan	40
6.4	Economic Impacts of Waste Export	40
6.5	Interstate Movement of Solid Waste in the US	41
6.6	Import and Export of Recyclables From US to Canada	41
6.7	Import of Hazardous Waste From US to Canada	42
6.8	Current and Future Regulatory Requirements	42
7	FUTURE MUNICIPAL WASTE DIVERSION IN THE GTA	45
7.1	Diversion Targets and Timing	45
7.2	Recycling	45
7.3	Household Organics	46
7.4	New and Emerging Technologies	46
7.5	Apartment and Multi-Family Waste	48
7.6	Non-Household Waste	49
7.7	Policies	51
7.8	Toronto Future Strategy	51
7.9	Peel Future Strategy	56
7.10	York Future Strategy	58
7.11	Durham Future Strategy	59
7.12	Net Impact on Landfilling Requirements	62
